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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,553	07/19/2001	Scott B. Mccray	2001-1014A	6971

513 7590 01/22/2003

WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER

FORTUNA, ANA M

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 01/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-6

Office Action SummaryApplication No.
09/889,553Applicant(s)
McGray et alExaminer
Ana FortunaArt Unit
1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jul 19, 2001
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 4 6) ☐ Other:

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

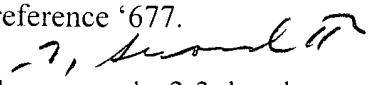

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita et al. (4,362,677) and further in view of Applicant's admissions. Reference '677 substantially discloses the process of making the membrane claimed, including EVA copolymer, the EVA percentage in the spinning solution, e.g. 10-90 % mole %, extruding and crosslinking with aldehyde is also disclosed (abstract, column 2, lines 51-61). the composition claimed.

Reference '677 also discloses adding alcohols and polyhydric alcohols with mixtures with water, these compounds are not disclosed in the reference as pore former, however, they are well art recognized volatile compounds that form pores by the application of heat to the product or membrane. Reference '677 teaches using mixtures of these compounds, or mixtures of alcohols and, polypropylene glycol, and all the compounds as claimed in claims 7-9 (column 4, lines 18-65). The **specific percentage of low and high molecular weight pore former** is not detailed in reference '677, however, teaches the amount of the polymers as being in the range of 15 to 40 percent by weight, which suggest a mixture of the solvents up to 60 %. It would have been obvious to one skilled in the art at the time the invention was made to adjust the solvents and pore solvents or pore former, e.g. alcohols, PEG, dimethylsulfoxide, water, as mixture of solvents as suggested in '677, and further select the amount of the more volatile compounds depending on

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desired pore size. It would have been also obvious to one skilled in the pertinent art to add alcohols and expect pore formation in the membrane due to its volatility. '677 also teaches the process temperatures as claimed, between 0 to 120 degree C. Water miscible organic solvents or water alone as coagulant are disclosed, and mixtures of water and a solvent for the coagulation medium in the composition claimed in step c) is also suggested, although the particular solvent is not specified, it would have been obvious to the skilled artisan select alcohol, since they are disclosed as solvent for EVA.(column 4, lines 66-68, column 5, lines 1-20). Drying the coagulated membrane by mild heating is also disclosed (column 6, lines 6-21). The rinsing step although is not disclosed is conventional in the art for removing excess of non-solvent excess of solvent from the membrane surface. Regarding claim 5, crosslinking with glutaraldehyde and drying the membrane, or heating the membrane after the crosslinking treatment is also disclosed (column 5, last paragraph, and column 6, lines 1-34). Regarding claims 15-16, the final membrane resulting from the process can be expected by one skilled in the art at the time the invention was made, based on the suggested composition. As to claim 17, wet heat treatment to adjust membrane performance and mechanical properties is disclosed in '677 (column 5, last paragraph through column 6, lines 5). The limitations claims 2-3, directed to stretching, and 21 are not disclosed in reference '677.


 **Applicants admits** in page 4, paragraphs 2-3 that the process of making the membrane is known in the art, except that the prior art does not recognize the value of using mixtures of the low molecular weight and high molecular weight pore former. Based on the teaching of reference

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677. it would have been obvious to one skilled in the art to use mixtures of alcohols and polypropylene glycol, or any other mixture of compounds suggested in (column 4, lines 35-53) 677, within the EVA and total solvent level suggested, e.g 40 % of EVA, and the rest additional compounds alone or in mixtures.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana Fortuna whose telephone number is (703) 308-3857. The examiner can normally be reached on Monday-Friday from 9:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached on (703) 308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 for regular responses, and (703)872-9311 for after finals.

Ana Fortuna

January 13 2003



ANA FORTUNA
PRIMARY EXAMINER